Amendments to the Specification

Please amend paragraph 0031 to read: ...catheter **10** comprises a manifold or hub **12**, a bidirectional or two-way valve or seal **14**, ...

Please amend the beginning of paragraph 0035 to read: The bidirectional valve or seal **14** is preferably located in the drainage lumen **32** of the catheter **10**, between the manifold **12** and the drainage holes **20**. Alternatively, the bidirectional valve or seal **14** may be mounted proximal to the manifold **12** or inside the manifold **12**. If the optional valve housing **15** is used, the housing **15** encircles the catheter **10** and is open to the drainage lumen **32**. The bidirectional valve **14** sets inside the housing **15**....

Please amend the beginning of paragraph 0051 to read: Once the catheter **10** is placed in the patient's chest, the bidirectional valve **14**, which is normally closed, prevents pneumothorax from occurring. The normally closed, bidirectional valve **14** seals the drainage lumen **32**. When the medical personnel require chest drainage, the bidirectional valve **14** is enabled or opened to allow fluid, air and contaminants to drain from the chest drainage tube **10**.

Please amend the last two sentences of paragraph 0052 to read: ...When the vacuum system is activated, a vacuum is drawn through the valve-enabling lumen **34** and the bidirectional valve **14** opens. Stopping the vacuum system causes the bidirectional valve **14** to close and seal the drainage lumen **32**.

Please amend paragraphs 0053 through 0056 to read:

[0053] The preferred vacuum activated, bidirectional valve embodiment **14** is one or more balloons mounted within the drainage lumen **32** of the cannula **10**. More preferably, the balloons **14** are exposed to the drainage lumen **32** but reside within the optional valve housing **15** that is larger than the diameter of the drainage lumen **32**. The collapsed balloons **14** reside within the housing **15** and do not impinge on the drainage lumen **32** where they could impede passage of the trocar **40** or **54**. The balloons **14** are maintained in their collapsed state and out of the drainage lumen **32** by application of a vacuum through the valve-enabling adapter **26** and the valve-enabling lumen **34**. An optional stopcock on the valve-enabling adapter **26** is closed to maintain

the vacuum until it is desired to close the bidirectional drainage lumen seal **14**. The valve housing **15** is fabricated, preferably, from transparent materials in order to allow for visualization of valve function and verification of drainage lumen patency. The balloons **14** are made with open cell foam. Such open cell foams are typically made from polyurethane materials and the spaces between the cells in the foam interconnect. The skin or surface of the balloon **14** is a fluid impermeable, elastomeric material such as latex, polyurethane, silastic, silicone elastomer and the like.

[0054] The balloons **14** are inflated, thus closing the bidirectional valve **14**, by resilient expansion of the foam after fluid is allowed to flow back into the collapsed balloons. This may be done by removal of the vacuum or by opening the stopcock. When the bidirectional valve **14** is closed, drainage through the drainage lumen **32** stops and the chest opening is sealed. The bidirectional valve **14** is opened by application of a vacuum to the valve enabling lumen **34**. The vacuum system can be operably connected to the same vacuum system used for drainage of the thorax. In this way, the bidirectional valve **14** automatically opens when drainage is activated.

[0055] Other bidirectional valve embodiments **14** include balloons that are normally deflated and open. These bidirectional valves **14** require that positive pressure be applied to inflate the balloons and occlude the drainage lumen **32**. Removal of the pressure or application of a vacuum causes the balloons to deflate and the bidirectional valve **14** to open. Such bidirectional valves **14** do not require the use of open cell foam cores but may require external devices to monitor drainage lumen parameters and ensure patient safety.

[0056] In another embodiment, the bidirectional valve or seal **14** is made from a soft rubber or polymer. A central hole, slit or cross in the bidirectional valve **14** allows for generation of potential space in this normally closed structure. In this embodiment, insertion of a hollow obturator through the valve-enabling adapter **26** and the central hole, slit or cross opens the bidirectional valve **14**, permitting fluid, air and contaminants to pass through the hollow obturator.